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ABSTRACT

A 1959 survey of 11 research studies involving mental health of United States citizenry showed that 9% of practicing teachers were seriously maladjusted, 17% were unusually nervous, and 25% were unhappy, worried and dissatisfied. This study sought to update these findings by examining various stress factors and their relationship to the mental health of graduate students, school teachers, and the lay public. Measures of depression, perception, paranoia, and total scores as well as detailed life histories were obtained from approximately 500 volunteer subjects (ages 20-49) representing either graduate students from various academic disciplines or the lay public. Contrast of the profiles of the two groups was delineated. Analysis of variance was used to determine the salient factors of syndrome relating to stress and maladjustment. The instrument used for classification purposes was the Hoffer-Osmond Diagnostic Test. General data indicated that 60% of the study population were normal while 40% were maladjusted. Age and sex differences are reported for both graduate students and lay subjects. (JEL)

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STRESS AND MENTAL HEALTH OF GRADUATE STUDENTS AND NON-GRADUATES BY AGE AND EDUCATIONAL LEVELS

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An assessment of the prevalence of maladjustment in the United States is an admittedly hazardous task. Nevertheless, studies by Felix and Kramer (1952) demonstrated that based upon a population of 171 million there were some 12 million people in the United States suffering from a variety of personality or behavioral maladies. Studies of mental health among teachers four decades ago revealed an incidence of mental illness in a ratio of 3 normal to 1 disturbed. (Altman 1941, Boynton 1942, NEA Research 1938, 1945, 1951) More specifically, a survey by Kaplan (1959) of eleven research studies involving mental health of United States citizenry showed that nine percent of practicing teachers were seriously maladjusted, 17 percent were unusually nervous, and 25 percent were unhappy, worried and dissatisfied. The present study sought to update these findings by examining various stress factors and their relationship to the mental health of graduate students, the school teacher, and the lay public.

Problem

This study examined stress factors and their relationship to the mental health of graduate students and the lay public in urban centers from a number of states, i.e., Florida, Illinois, North Carolina, South Carolina, Arizona, Virginia, and Washington, D.C. Measures of adjustment and background information were elicited from the subjects. An examination of the following factors such as age, graduate levels, number of days sick, race and sex differences, drug and alcohol use, financial aid received, activity level, and their relationship to maladjustment was investigated.

Methodology

Measures of depression, perception, paranoia, and total scores as well as detailed life histories (VITA) were obtained from approximately five hundred volunteer subjects (ages 20-49) representing either graduate students from various academic disciplines or the lay public. Contrast of the profiles of the two groups was delineated. Analysis of variance was used to determine the salient factors of syndrome relating to stress and maladjustment. The instrument used for classification purposes was the Hoffer-Osmond Diagnostic Test (HOD), a 145 card sorting test somewhat like the original M.M.P.I. Many of the items are similar in the two tests. The HOD has been used successfully in the clinical situation particularly in judging the level of perceptual disorientation of institutionalized patients and subsequent therapy for the schizophrenic. The

reliability (test re-test) for the total score subtest is .81 to .88. For the various subtests, the reliability coefficients range from .70 to .80 with the exception of the depression subtest which was between .71 and .86. The split-half reliabilities were even greater. In regard to validity, inter-correlations of total scores and the perception subtests ranged between .95 and .97. The subtest assessing paranoia revealed correlations between .80 and .86.

Testing of the subjects in this study was administered individually or in small groups. If the subjects were tested individually, they received the HOD and then completed the VITA. In group testing, the VITA was utilized first and then the HOD to facilitate the recording of the results. Upon the completion of the card sorting, the investigators or their assistants immediately charted the results on a score sheet, eliminating the possibility of card reshuffling or inspection by those waiting to take the test. Assignment of maladjustment was made on the basis of the scoring levels suggested in the test manual.

Results

General data indicated that sixty percent of the population from this study were normal while forty percent were maladjusted. This division holds for the three groups of lay persons when the age and gender categories of 20-29, 30-39, 40-49 are combined. Among graduate students, whether presently teaching or not, the same percentages held with a

slight advantage to women over men in the incidence of maladjustment among those not presently teaching. An assessment of male graduate students revealed that of men in the age brackets 20-29, 52.5% were normal while 47.5% were maladjusted. Among women in the same age group, 63% were normal and 37% maladjusted. In the age category 30-39, considerable higher percentages of maladjustment were noted in the total graduate group comprising both male and female. In the normal classification, women and men (N=73) had nearly the same percentages with women showing 71.4%; and men, 71.1%. In the lay population sample, collapsing the genders for the 30-39 groups, sixty percent were normal and forty percent disturbed. In the 40's decade, graduate men and women students showed 65% registered normal and 35% as maladjusted. Among the general public, this statistic is 63% normal with 37% disturbed.

An examination of Table 1 indicates non-significant differences between the graduate and lay populations (60% maladjusted to 40% normal). As pointed out above and shown here, greater variation exists within the groups than between them. (Note the estimate of S^2, i.e. S_w^2.) Relative to race (Table 2), differences between black and white graduate students was significant at the .001 level of confidence with the heavier maladjustment incidence belonging to women in each of the three age categories. Among white women graduates, those in their 20's were the most disturbed. However, among all white women 20-49, there was less

maladjustment than among white men. Among black males, those in their 20's had the highest incidence of maladjustment while those in their forties had the least amount. Blacks generally had higher incidences of maladjustment.

Table 1

Analysis of Variance Utilizing Adjustment Scores of Graduate Students and Lay Populations 20-49 Years of Age

Source of Variation	Number of Squares	Degrees of Freedom	Estimate of S^2	Obtained F	Probability
Between Group Means	SS_b = 406.80	K-1 = 3	S_b^2 = 135.60		N.S.
Within Groups	SS_w = 181098	N_t-K = 413	S_w^2 = 338.494		

Table 2

Analysis of Variance Utilizing Adjustment Scores of Black and White Male and Female Graduate Students 20-49 Years of Age

Source of Variation	Number of Squares	Degrees of Freedom	Estimate of S^2	Obtained F	Probability
Between Group Means	SS_b=6485.10	K-1=3	S_b^2=2161.70		
Within Groups	SS_b=111,823.62	K_t-K=292	S_w^2=382.92	5.64	Significant at the .01 level
Total	118,308.72				

The analysis indicated that the HOD does distinguish between the normal and the disturbed groups in that among males in the 30-39 bracket, a significance at the .001 level (T = 3.81 D.F. 21) was found. Slightly less significance was found (.05) among women in the same age category (t = 2.179, D.F. .12). Between non-teachers and teachers (N = 270) the T value of 0.93 was not significant. The hypothesized "overload" as an etiology for maladjustment was not found to be significant.

Table 3

Adjustment Among The Total Graduate Student Population Related to Activity Levels by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
301	9	14.95	16.92	N.S.

In general, those who were judged to have more responsibility by our criteria, e.g., numbers of children, marriage, jobs, schooling, employment outside the home, taking care of parents or older relatives, and the like, were more times than not judged normal. Males in their 20's recorded a lower level of activity than any other group, whether normal or maladjusted.

Table 4

Adjustment and Non-Adjustment Among Graduate Male and Female 20-29 Years of Age Based Upon Activity Level by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
237	6	7.05	12.59	N.S.

Among women both lay and graduate, 71.4% in their 30's were evaluated as normal; at the same time, these carried the largest number of activities than any other group, i.e., women in their 20's and 40's and men in the 20-49 category.

Table 5

Activity Level and Adjustment Among Female Graduate Students 30-39 Years of Age by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
83	6	13.23	12.59	.05 level

When the 30's and 40's decade of graduate students are grouped, the relationship of maladjustment as determined by activity seems to suggest that an inverse covariance is operative, i.e., the incidence of increasing activity heralds the decline in the incidence of maladjustment. In any event for these age groups (30-49), graduate students who are judged normal have a significantly higher number of activities.

Table 6

Activity Level and Adjustment Among Male and Female Graduate Students 30-49 By Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
135	9	21.51	16.92	.01

This study did not find a relationship between the use of drugs, alcohol, smoking, taking of sleeping pills and tranquilizers and the incidence of disturbance. One could

not use the number of activities to differentiate between the normal and disturbed. A data analysis using chi square revealed that the use of drugs, alcohol, and the like indicated no difference between the graduate students in the 20-29 age group who were normal or maladjusted (Table 7). Nor did it discriminate between graduate students who are teachers or non-teachers in the 20-49 age groups (Table 8). Finally, it did not provide any dichotomy between men and women drug users in terms of normalcy or maladjustment (Table 9).

Table 7

Level of Drug and Alcohol Use and Adjustment Among 20-29 Male and Female Graduate Analyzed by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
150	9	8.11	16.92	N.S.

Table 8

Level of Drug and Alcohol Use and Adjustment Among Graduate Students Who Are Teachers or Non-Teachers 20-49 Years of Age by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
239	9	8.44	16.92	N.S.

Table 9

Level of Drug and Alcohol Use and Adjustment Among Male and Female Graduate Students by Chi Square

Number	Degrees of Freedom	Chi Square Σ's	Probability Level at .05	Significance
237	3	5.32	7.82	N.S.

It was assumed that given the great number of variables drawn from the VITA, a statistical assessment would give some amalgam accounting for maladjustment. However, an examination of early sex experience, general happiness in childhood, success in schooling, and mother's and father's educational levels provided no significant clues. In reviewing social-economic factors as harbingers of personality difficulty, examination of the amount of financial aid that graduate students had to secure to effect their education showed no significant relationships. Percentages of those receiving a large amount of aid as related to adjustment is presented below.

It is obvious that a higher percentage of those judged disturbed received financial aid while attending undergraduate college, but an analysis revealed no significant differences between the groups. Inspecting the number of days sick (Table 11), we find some variations between the normal and disturbed in the subject population who responded to this item but no significant differences were observed. Women had more sick days on the average than men, whether or not they were categorized as graduate students or lay subjects,

normal or maladjusted. Lay female subjects averaged more days sick than did graduate students.

Table 10

Financial Aid Received by Graduate Students While Undergraduates Amounting to More Than Seventy Five Per Cent of Their College Cost

Female (N=238)

Ages	20-29	30-39	40-49	Totals
Normal	9 of 83 (10.8%)	5 of 39 (12.8%)	2 of 26 (7.6%)	16 of 148 (10.8%)
Disturbed	11 of 62 (17.7%)	2 of 22 (9.1%)	1 of 6 (16.6%)	14 of 90 (15.5%)

Male (N=185)

Ages	20-29	30-39	40-49	Totals
Normal	7 of 55 (12.7%)	5 of 44 (11.3%)	4 of 15 (16.6%)	16 of 114 (14.0%)
Disturbed	7 of 51 (13.7%)	4 of 10 (40.0%)	2 of 8 (25.0%)	13 of 69 (21.3%)

Table 11

Days Sick Last Year As Reported by Graduate Students and Lay Subjects

	Graduate Students		Lay Subjects	
	Male	Female	Male	Female
	Ages 20-49		Ages 20-49	
Normal	3.7	2.6	3.0	6.0
Disturbed	6.04	3.8	4.3	7.6

Discussion

A fundamental assumption in the research presented here is that mental health is the function of situational conditions subject to change according to an ad hoc environmental circumstance. A corollary hypothesis is advanced, namely that stress as a component of maladjustment relates to an "overload" syndrome involving an amalgam of roles: housewife, housefather, mother, wage earner, student and, in some instances, caretaker for the older generation.

The data elicited from this study show that the maladjusted have fewer activities (responsibilities); where they indicate more activities are perhaps symptomatic rather than causative. It is significant that those with the highest order of activity level (females in their 30's) also show the least maladjustment. The fact that the males and females in both graduate and lay domains in the 30-39 year age brackets have the least degree of maladjustment may be a function of finding a life's direction or purpose. For example, "housekeeping" and "homemaking" functions have been established and have become routinized and one's place in the community is sufficiently secure to allow time for relaxation, recreation, and the like. Various crises characterize adults from 40-49 and a rise in maladjustment from the previous decade is seen in increasing physical and psychological distractions, feeling of anomie, lack of potentia, disinterest in work, and identity problems. Responsibility that is intergenerational in nature is often

a considerable part of the problem, requiring one to assist in the emancipation of the young adult from home as well as provide care for older parents. Moreover, the advancement of one's own interest is interfaced upon this responsibility.

For graduate students in their twenties, it would seem that the uncertain nature of future employment, the demands of graduate work, and the indeterminate nature of their status and social circumstances account for some of the neuroticism experienced in this period. The use of drugs, alcohol and sleeping pills, did not serve to dichotomize the normal from the disturbed subjects. Some heavy usage is seen by those judged adjusted as well as by those categorized as maladjusted. The instrument for collecting this data (VITA) undoubtedly was not sensitive enough to sort out exaggeration and under assessment by those responding to questions about drug usage. That black graduate students have significantly higher levels of maladjustment in the total score assessment according to the HOD as well as in the subparts of the instrument may indicate a pervasive paranoia and depression. Black subjects in this study were students in historically white institutions. Considering the competition for grades and jobs and the general ambivalence of blacks in American society, an even higher maladjustment incidence might have been expected.

Conclusion

There are many questions to be resolved from this study. From our sample, the ratio of 3 normal to 2 disturbed seems

to be valid. If this is indeed the case, amelioration needs to be considered. The exhibited perceptual anomalies of the maladjusted will pass for many with the easement of pressure, e.g., graduation, employment, marriage. The graduate students who are in their thirties have fewer difficulties as measured by our diagnostic instrument. Is it because that age group is more mature in view of the life situation and have more control and visualize future success to a greater degree than those in their twenties? We must conclude at this point in our study that there is no indication that any cluster of factors relate to the presence of maladjustment. Nevertheless, the pressures on teachers in the urban setting demand relief. In the Ohio State retirement system, for example, 32 percent of all disability retirements among teachers are due to mental health reasons. An elementary teacher with a class of 30-35 has some 1200 psychological exchanges (Riccio, 1977) with students in a day. These range from verbal admonishments to the separation of student fights. Certainly, teachers should be given prophylactic mental health provisions such as leaves, guaranteed rest periods, and available counseling. The sometimes weak support from the public and the lack of adequate remuneration exacerbates the situation. Where urban schools are handicapped by deteriorating economic circumstance, the situation is likely to worsen before it improves.

Significantly, in the area where these samples were drawn, there were no strikes and lay-offs; even so, teachers as opposed to non-teaching graduate students and the lay public had a high rate of maladjustment. Some help for the beleagured teacher must be found.

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